atrophied at an earlier stage in the development. This manner of development, though peculiar, corresponds fundamentally to the Molluscan type. The renal ducts probably originally served as sexual ducts also (e. g. Chiton). In Paludina we have, associated with the twisting of the body, a differentiation in function, by which the right uro-genital duct comes to serve simply as a renal organ and the left as a sexual organ.

Among the most valuable features of this paper is the review of the literature of the subject. The author's discussion of the relationship of the Mollusca to the annelids and flat worms is not so important. Many points in the paper and some whole sections (e. g. the development of the sense organs) have been passed over in this brief review. I trust, however, that reference has been made to the points of special interest, and such points are not few. The author's clearness and conciseness of statement make his paper a very readable one.—MAYNARD M. METCALF.

ENTOMOLOGY.

Classification of the Mites.—A paper of much value to students of the Acaroidea has recently been published[1] by Dr. Trouessart. It is entitled "Considérations générales sur la classification des acariens, Suivies d' un essai de classification nouvelles." The author first gives a historical sketch of the classifications that have been proposed for the group, from that of Latreille in 1795 to that of Canestrini in 1891. He then discusses the characters upon which the classification should be based, gives the tabular statement of his new classification (translated on the following page) and concludes with a useful review of the families, subfamilies and genera, with the characters of the families and subfamilies. Dr. Trouessart thinks the mites should form the sub-class Acaroidea, of the class Arachnida, and divides them into two orders, the Acarina and the Vermiformia.—C. M. W.

Color Preferences of the Carpet Beetle.—During the past May the Buffalo carpet beetles (*Anthrenus scrophulariæ*) have been abundant on the tulip beds at Hanover, N. H., taking advantage, no doubt, of the open windows of the house-cleaning period to fly out and get some pollen for food. In a small bed containing about three dozen tulips, three-fourths of which were of red colors, and the rest of white and

[1]Revue des Sciences Naturelles, 1892.

Orders.	Sub-orders.		Families.	Sub-families.
Sub-class Acaroidea.	Order I. **Acarina.** Abdomen entirely united with cephalothorax.	A. Tracheæ opening on anterior portion of body (rostrum or thorax). **Prostigmata.** Atrophied in aquatic types. Body having epimera below.	Palpi free, armed; mandibles hooked or styliform.	Terrestrial 1. *Trombidiidæ*	Erythræinæ Trombidinæ Cheyletinæ Scirinæ Tetranycinæ Cæculinæ Limnocharinæ
				Fresh w. 2. *Hydrachnidæ* Marine 3. *Halacaridæ*	
			Palpi free, unarmed; mandibles in form of cheliceræ.	4. *Bdellidæ*	Bdellinæ Eupodinæ
		B. Tracheæ opening at posterior part of body, at the base of the feet. **Metastigmata.** Body having a ventral sternum or plastron.	Palpi free, unarmed, tactile; mandibles hooked.	5. *Gamasidæ*	Nicoletiellinæ Uropodinæ Gamasinæ Dermayssinæ
			Palpi tactile, mandibles hooked; mandibles in form of cheliceræ.	6. *Ixodidæ*	Argasinæ Ixodinæ
			Palpi free, tactile, fusiform.	7. *Oribatidæ*	Oribatinæ Nothrinæ Hoplophorinæ
		C. No tracheæ. **Astigmata.** Body having epimera below. Palpi adhering at their base, slender, tactile; mandibles in form of cheliceræ.		8. *Saracoptidæ*	Tyroglyphinæ Canestrininæ Listrophorinæ Analgesinæ Sarcoptinæ Chirodiscinæ
	Order II. **Vermiformia.** Abdomen distinct from cephalothorax, ringed. No tracheæ.	A. **Octopoda.** 4 pairs feet, palpi armed, mandibles styliform, immovable.		9. *Demodicidæ*	
		B. **Tetrapoda.** 2 pairs of feet, palpi unarmed, mandibles styliform, movable.		10. *Phytoptidæ*	

yellow, the beetles were found almost exclusively upon the latter varieties, apparently preferring white to yellow, and undoubtedly choosing one of these in preference to the red. On bright days a dozen would sometimes be found in a single white tulip, and two or three hundred beetles were collected from the patch.

It is probable that at the time these visits were made the beetles had not yet laid their eggs. Some were observed mating. Consequently gathering and destroying them on these early spring blossoms is a simple means of checking their increase. I saw a few on white and yellow crocuses, but none on other flowers, wild or cultivated, except the tulips.—CLARENCE M. WEED.

Association of Economic Entomologists.—Mr. F. M. Webster, Secretary, has issued the following announcement concerning the next meeting of this body: In accordance with an action of the Association, taken at the Washington meeting, the fourth annual meeting will be held at Rochester, New York, two days prior to the meeting of the American Association for the Advancement of Science.

All members intending to present papers are requested to forward titles to the Secretary before August 1st, in order that the program may be prepared in proper season.

The proceedings of our meetings are attracting the attention of working entomologists of other countries, and it is to be hoped that members will spare no efforts to make the coming meeting even better than those which have preceded it. Owing to the continued ill-health of President Lintner, and in order to relieve him of as much labor as possible, all correspondence, unless of a nature necessitating his attention, may be addressed to the Secretary, at Columbus, Ohio.

Dr. Lintner's seventh report on the injurious and other insects of the State of New York has lately been published. It covers the year 1890, and forms a very creditable volume of more than 200 pages. The injurious insects treated of include the poplar saw-fly (*Aulacomerus lutescens*), the black and red woolly bear (*Pyrrharctia isabella*), the prolific Chlorops (*C. prolifica*), the chrysanthemum fly (*Phytomyza chrysanthemi*), the bean weevil (*Bruchus obsoletus*), the lentil weevil (*Bruchus lentis*), and the periodical Cicada (*C. septendecim*). Then follows a large number of interesting notes on various insects, an account of two injurious arthropods, the clover mite (*Bryobia pratensis*) and a household centipede (*Cermatia forceps*), two entomological papers of general interest, and a list of publications of the

entomologist. The whole volume shows the same careful preparation as its predecessors, and is well illustrated, a number of the figures being new.

Notes on the Clover Mite.—This little creature (*Bryobia pratensis*) has been extremely abundant during the past spring at Hanover, N. H. It appeared in swarms early in April, congregating on window-sills of houses and other buildings, and continued abundant until early in June. In Dr. Riley's recent Insect Life article upon the species it is surmised that at the north the mite passes the winter in the egg state, but this evidently is not the case in the latitude of Hanover.—C. M. W.

Entomological Notes.—A bulletin (No. 19) of unusual interest comes from the Colorado Experiment Station. It contains Prof. Gillette's "Observations Upon Injurious Insects, season of 1891." It includes discussions of the fruit-tree leaf-roller (*Cacoecea argyrospila*), box-elder leaf-roller (*C. semiferana*), grape-vine leaf-hopper (*Typhlocyba vitifex*), gooseberry fruit-fly (*Trypeta canadensis*), imported currant borer (*Sesia tipuliformis*), and several others. There are twelve good illustrations, all but one being original.

Number 4 of the current volume of the Ohio Station Bulletin contains an extended discussion of the "insects which burrow in the stem of wheat." by Mr. F. M. Webster. Eight species are enumerated.

At the next meeting of the Association of Agricultural Colleges and Experiment Stations, Chairman Lawrence Bruner, of the Committee on Entomology, proposes to describe the working facilities, library, collections, equipment, etc., of the various entomologists represented in the Association.

Prof. S. A. Forbes, in charge of the entomological exhibit at the World's Fair, is endeavoring to get together a biological collection of all the insects whose life histories have been worked out in whole or in part by the experiment stations.

In Bulletin No. 19 of Hatch Experiment Station of Massachusetts Prof. C. H. Fernald has published an excellent account of the present status of the gypsy moth (*Ocnerea dispar*), illustrated by an admirable colored plate showing the various stages of the moth, a map of the

region infested in 1891, and four reproductions of photographs of the effects of the caterpillar's work. The same bulletin contains an account of certain cranberry insects and of various entomological experiments.

In the April, 1892, issue of *Entomologist's Monthly Magazine* Dr. E. Bergroth describes as *Dulichius wrongtoni* n. sp. an ant-mimicking hemipteron found in India. It mimics the Indian ant (*Polyrrhachis spiniger* Mayr), to which it is said to have a most striking resemblance.

In the same issue of the same magazine Mr. Chas. Fenn describes "the pole system" of collecting Tortrices. It consists essentially of the use of a net of large diameter on a very long pole made of jointed bamboo rods, by means of which small moths flying about the tops of trees can be captured during the day.